

REMARKS

The Applicants respectfully request for further examination and consideration in view of the amendments above and the arguments set forth fully below. Claims 1, 3-8 and 10-43 were previously pending in this application. Within the Office Action, Claims 1, 3-8 and 10-43 have been rejected. By the above amendments, Claims 1, 8, 19, 29, 40 and 42 have been amended and new Claims 44 and 45 have been added. Accordingly, Claims 1, 3-8 and 10-45 are currently pending.

Rejection Under 35 U.S.C. § 102

Within the Office Action, Claim 1 has been rejected under 35 U.S.C. § 102(c) as being anticipated by U.S. Patent No. 6,587,453 to Romans et al. ("Romans"). Applicants respectfully disagree with this rejection.

Romans teaches a method of communicating first and second data types. Romans teaches a medium access control protocol which enables a wireless network to carry both isochronous and asynchronous data traffic. [Romans, col. 1, lines 51-54] Romans teaches that a control point provides support for isochronous services. [Romans, col. 2, lines 24-25] Romans further teaches that an isochronous data terminal or a voice terminal only uses the time division multiple access mechanism in the contention-free period to communicate with a control point. [Romans, col. 2, lines 26-29] Romans does not teach a first type of device operating according to a first protocol and a second protocol **and** one or more of *a second type of device operating according to only the second protocol*. Romans also does not teach that the first protocol has priority over the second protocol.

Within the Office Action, it is argued that Romans does teach that the first protocol has priority over the second protocol. Within the Office Action, it is stated that, "Isochronous data has priority over Asynchronous data in that the transmission of Asynchronous data starts only after the complete transmission of Isochronous data." [Office Action, page 3] Furthermore, Column 2, lines 13-15 of Romans is cited as teaching this. However, Romans at Column 2, Lines 13-15 teaches, "[t]he contention period occupies the time remaining between the two contention-free periods." [Romans, Col. 2, Lines 13-15] Nothing in the cited section indicates that one protocol has priority over another. Column 3, lines 30-31 of Romans is also cited in reference to priority, but again there is nothing teaching priority of a first protocol over a second protocol. Romans at Column 3, Lines 30-31 teaches, "(Number of connections*2) *

(SIFS+Duration of TDMA Voice Data message).” [Romans, Col. 3, Lines 30-31] Therefore, Romans does not teach every element of the claims and thus does not anticipate the claims.

Within the Response to Arguments section of the Office Action it is further argued that Romans teaches that the contention-free period has priority over the contention period, because the contention-free period always precedes the contention period and there is no cap for the contention-free period, while there is a cap for the contention period. [Office Action, pages 35-36] The Applicants respectfully disagree. Romans does not teach that the contention-free period has priority over the contention period. Romans teaches that the length of the first contention-free period (CFP1) is dictated by the number of re-transmissions which are required. [Romans, Col. 3, lines 16-22] Romans also teaches that the length of the second contention-free period (CFP2) is dictated by the number of active TDMA connections. [Romans, Col. 3, lines 16-22] It is further taught in Romans that the contention period occupies the time remaining between the two contention-free periods. [Romans, Col. 2, lines 7-8] This does not however assign priority to the contention-free periods. Nor does Romans teach that the contention-free periods have priority over the contention period. In fact, Romans also teaches that the contention-free periods are only applicable in the case of a managed network, but that if no control point is present then the contention period occupies the whole superframe and the network operates as an ad-hoc network. [Romans, Col. 2, line 66 - Col. 3, line 3] This argues against the contention-free period having priority over the contention period.

Additionally, to further prosecution, Claim 1 has been amended to include the limitation wherein the second protocol is prioritized between a first set of traffic and a second set of traffic. Romans does not teach this limitation.

In contrast to the teachings of Romans, the combined IEEE 1394-2000 and ethernet network of the present invention allows devices on the network to operate according to both the IEEE 1394-2000 protocol and the ethernet protocol. The devices within the network are able to send IEEE 1394-2000 isochronous data, IEEE 1394-2000 asynchronous data and ethernet data. Both IEEE 1394-2000 and ethernet devices within the network are coupled to modified hubs (MHubs) to form a local cluster. The MHubs are coupled to an ethernet switch which controls communications between devices in different local clusters. The ethernet switch and the MHubs obey an isochronous interval in which all isochronous data transfers will be allowed. Preferably, on a regular and reoccurring period, the ethernet switch sends an isotick signal to begin the isochronous interval. Alternatively, clocks at all nodes within the network are synchronized to start and stop the isochronous interval at the same time without the need for any one device to

transmit the isochronous signal. Any bandwidth left after the isochronous interval is then allocated to the traditional ethernet traffic and the IEEE 1394-2000 asynchronous traffic, until the start of the next isochronous interval. As described above, Romans does not teach that the first protocol has priority over the second protocol. As also described above, Romans does not teach *a second type of device operating according to only the second protocol*.

The independent Claim 1 is directed to a method of transmitting data within a network including one or more of a first type of device operating according to a first protocol and a second protocol and one or more of a second type of device operating according to only the second protocol, wherein devices of the first type and devices of the second type communicate with each other within the network. The method of Claim 1 comprises establishing a periodic cycle including a first portion and a second portion, allowing only transmissions according to the first protocol during the first portion and allowing only transmissions according to the second protocol during the second portion, wherein the first protocol has priority over the second protocol, and further wherein the second protocol is prioritized between a first set of traffic and a second set of traffic. As described above, Romans does not teach that the first protocol has priority over the second protocol. As also described above, Romans does not teach *a second type of device operating according to only the second protocol*. Romans also does not teach wherein the second protocol is prioritized between a first set of traffic and a second set of traffic. For at least these reasons, the independent Claim 1 is allowable over the teachings of Romans.

Within the Office Action, Claim 40 has been rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent Publ. No. 2001/0043731 to Ito et al. ("Ito"). Applicants respectfully disagree with this rejection.

By the above amendments, Claim 40 has been amended to include the limitation wherein the asynchronous protocol is prioritized between a first set of traffic and a second set of traffic. Ito does not teach this limitation.

The independent Claim 40 is directed to a method of transmitting data within a network including one or more of a first type of device operating according to an isochronous protocol and an asynchronous protocol and one or more of a second type of device operating according to only the asynchronous protocol, wherein devices of the first type and devices of the second type communicate with each other within the network. The method of Claim 40 comprises establishing a periodic cycle including a first portion and a second portion, allowing only transmissions according to the isochronous protocol during the first portion and allowing only transmissions according to the asynchronous protocol during the second portion,

wherein the isochronous protocol has priority over the asynchronous protocol, and further wherein the asynchronous protocol is prioritized between a first set of traffic and a second set of traffic. As described above, Ito does not teach wherein the asynchronous protocol is prioritized between a first set of traffic and a second set of traffic. For at least these reasons, the independent Claim 40 is allowable over the teachings of Ito.

Rejection Under 35 U.S.C. § 103

Within the Office Action, Claims 1, 3-5 and 7 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,141,355 to Palmer et al. ("Palmer") in view of U.S. Patent No. 6,704,302 to Einbinder ("Einbinder"). Applicants respectfully disagree.

Palmer teaches a network system for providing transmission of real-time data and non-real-time data between a plurality of network devices. Palmer also teaches synchronizing devices to a periodic time frame with two time intervals defined within each repeating frame period. During the first time interval, only isochronous traffic is transmitted, and during the second time interval, the devices function using only standard Ethernet. [Palmer, col. 4, lines 55-67] As recognized within the Office Action, Palmer does not teach that either time interval has priority over the other.

Einbinder appears to be cited for the purpose of showing that the first protocol has priority over the second protocol. Applicants respectfully disagree with this rejection and the inclusion of Einbinder. Again, the concepts of isochronous, asynchronous and priority have been confused within the Office Action to support this rejection.

In contrast to the teachings of Einbinder, it is argued in the Office Action that the device adapter 2 of Palmer operates according to a first protocol (real-time isochronous protocol) and a second protocol (non-real time ethernet protocol) and the device adapter 3 of Palmer operates only according to the second protocol (non-real time ethernet protocol). Einbinder teaches giving a priority advantage of real-time data over non-real-time data, but does not teach isochronous data. Thus, the combination of Palmer and Einbinder is improper. Furthermore, as described above, Claim 1 has been amended to include the limitation wherein the second protocol is prioritized between a first set of traffic and a second set of traffic. Palmer, Einbinder and their combination do not teach this limitation.

In contrast to the teachings of Palmer, Einbinder and their combination, the combined IEEE 1394-2000 and ethernet network of the present invention allows devices on the network to operate according to both the IEEE 1394-2000 protocol and the ethernet protocol. The devices

within the network are able to send IEEE 1394-2000 isochronous data, IEEE 1394-2000 asynchronous data and ethernet data. Both IEEE 1394-2000 and ethernet devices within the network are coupled to modified hubs (MHubs) to form a local cluster. The MHubs are coupled to an ethernet switch which controls communications between devices in different local clusters. The ethernet switch and the MHubs obey an isochronous interval in which all isochronous data transfers will be allowed. Preferably, on a regular and reoccurring period, the ethernet switch sends an isotick signal to begin the isochronous interval. Alternatively, clocks at all nodes within the network are synchronized to start and stop the isochronous interval at the same time without the need for any one device to transmit the isotick signal. Any bandwidth left after the isochronous interval is then allocated to the traditional ethernet traffic and the IEEE 1394-2000 asynchronous traffic, until the start of the next isochronous interval. As described above, if the first protocol is isochronous data and the second protocol is asynchronous data, as established within the citation of Palmer within the Office Action, then neither Palmer, Einbinder nor their combination teach wherein the second protocol is prioritized between a first set of traffic and a second set of traffic.

The independent Claim 1 is directed to a method of transmitting data within a network including one or more of a first type of device operating according to a first protocol and a second protocol and one or more of a second type of device operating according to only the second protocol, wherein devices of the first type and devices of the second type communicate with each other within the network. The method of Claim 1 comprises establishing a periodic cycle including a first portion and a second portion, allowing only transmissions according to the first protocol during the first portion and allowing only transmissions according to the second protocol during the second portion, wherein the first protocol has priority over the second protocol, and further wherein the second protocol is prioritized between a first set of traffic and a second set of traffic. As described above, neither Palmer, Einbinder nor their combination teach wherein the second protocol is prioritized between a first set of traffic and a second set of traffic. For at least these reasons, the independent Claim 1 is allowable over the teachings of Palmer, Einbinder and their combination.

Claims 3-5 and 7 are dependent on the independent Claim 1. As discussed above, the independent Claim 1 is allowable over the teachings of Palmer, Einbinder and their combination. Accordingly, the Claims 3-5 and 7 are all also allowable as being dependent on an allowable base claim.

Within the Office Action, Claim 6 has been rejected under 35 U.S.C. § 103(a) as being unpatentable over Palmer in view of Einbinder and further in view of U.S. Patent No. 6,324,178 to Lo et al. ("Lo"). The Applicants respectfully disagree.

Claim 6 is dependent on the independent Claim 1. As discussed above, the independent Claim 1 is allowable over the teachings of Palmer, Einbinder and their combination. Accordingly, the Claim 6 is also allowable as being dependent on an allowable base claim.

Within the Office Action, Claims 8 and 10-17 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,747,979 to Banks et al. ("Banks") in view of Palmer and U.S. Patent No. 7,275,255 to Suda et al. ("Suda"). The Applicants respectfully disagree.

Banks teaches a method and apparatus for bridging between networks. As recognized within the Office Action, Banks does not teach a bridge or hub that is connected to and communicating with a switch device. As described above, Palmer teaches a network system for providing transmission of real-time data and non-real-time data between a plurality of network devices. It is stated within the Office Action that Palmer teaches in Figures 2 and 6 a hub or bridge in the form of a Device Adapter with a third interface (network connection point 2) going to a switch (element 4 of Figures 2 and 6). The Applicants respectfully disagree. Palmer teaches that the "X-hub 4 is designed to replace and upgrade an Ethernet hub 3 as in FIG. 1, so the X-Hub 4 preferably provides the same electrical interface to Network Interface Points 2 as does an Ethernet hub 3." [Palmer, col. 9, lines 28-32] Palmer then teaches that "an X-Hub 4 allows concurrent transmissions through several Network Interface Points 2 without resulting collisions, provided that the X-Hub 4 is configured appropriately." [Palmer, col. 9, lines 33-36] Palmer does not teach a third interface configured for coupling to and communicating with a switching device.

Within the Office Action, it is argued that "Palmer teaches a third interface configured for coupling to and communicating with the switching device. (See Figure 4A and Column 10, lines 35-45)" The Applicants respectfully disagree. According to the Office Action, the third interface is the Network connection point 2, and the X-Hub4 is the switch. Furthermore, as cited in the Office Action, Palmer teaches that "X-Hub 4 may be appropriately configured to directly route different signals to their destinations." [Palmer, col. 10, lines 36-39] Accordingly, what Palmer teaches is a configured switch (X-Hub4). Palmer does not teach a third interface configured for coupling to and communicating with the switching device.

Suda teaches a communication apparatus with a scheme where “a sync data and iso data are mixedly transferred within a predetermined communication cycle (usually 125μs/cycle) after the transfer of a cycle start packet (CSP) indicating the start of a cycle and with priority given to the transfer of the iso data.” [Suda, col. 5, lines 44-49] By the above amendments, Claim 8 now includes the limitation wherein the second protocol is prioritized between a first set of traffic and a second set of traffic. Suda does not teach wherein the second protocol is prioritized between a first set of traffic and a second set of traffic.

The independent Claim 8 is directed to a modified hub device configured for coupling between two or more devices operating according to two or more different protocols and a switching device, wherein devices of the first type and devices of the second type communicate with each other. The hub device of Claim 8 comprises a first interface configured for coupling to and communicating with one or more of a first type of device operating according to a first protocol and a second protocol, a second interface configured for coupling to and communicating with one or more of a second type of device operating according to only the second protocol and a third interface configured for coupling to and communicating with the switching device, wherein the switching device sends a periodic signal which signals the start of a period having a first portion and a second portion, wherein only communications in the first protocol are allowed during the first portion and only communications in the second protocol are allowed during the second portion, and further wherein the second protocol is prioritized between a first set of traffic and a second set of traffic. As described above, Banks, Palmer, Suda and their combination do not teach wherein the second protocol is prioritized between a first set of traffic and a second set of traffic. For at least these reasons, the independent Claim 8 is allowable over the teachings of Banks, Palmer, Suda and their combination.

Claims 10-17 are dependent on the independent Claim 8. As discussed above, the independent Claim 8 is allowable over the teachings of Banks, Palmer, Suda and their combination. Accordingly, the Claims 10-17 are all also allowable as being dependent on an allowable base claim.

Within the Office Action, Claim 18 has been rejected under 35 U.S.C. § 103(a) as being unpatentable over Banks in view of Palmer and Suda and further in view of U.S. Patent No. 6,772,267 to Thaler et al. (“Thaler”). Claim 18 is dependent on the independent Claim 8. As discussed above, the independent Claim 8 is allowable over the teachings of Banks, Palmer, Hewitt and their combination. Accordingly, the Claim 18 is also allowable as being dependent on an allowable base claim.

Within the Office Action, Claims 19-25 and 29-36 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Palmer in view of Banks and Einbinder. Applicants respectfully disagree with this rejection. Claims 19 and 29 each include the limitation, “wherein the second protocol is prioritized between a first set of traffic and a second set of traffic.” As described above, neither Palmer, Banks, Einbinder nor their combination teaches this limitation. Accordingly, neither Palmer, Banks, Einbinder nor their combination teach that wherein the second protocol is prioritized between a first set of traffic and a second set of traffic.

The independent Claim 19 is directed to a switching device configured for coupling to two or more hub devices providing interfaces to one or more of a first type of device operating according to a first protocol and a second protocol and one or more of a second type of device operating according to only the second protocol. The switching device of Claim 19 comprises a plurality of ports, each port coupled to a corresponding hub device for interfacing with devices coupled to the corresponding hub device and a control circuit coupled to the plurality of ports for sending a periodic signal which signals the start of a period having a first portion and a second portion, wherein only communications in the first protocol are allowed during the first portion and only communications in the second protocol are allowed during the second portion, wherein the first protocol has priority over the second protocol and further wherein the second protocol is prioritized between a first set of traffic and a second set of traffic. As described above, neither Palmer, Banks, Einbinder nor their combination teach wherein the second protocol is prioritized between a first set of traffic and a second set of traffic. For at least these reasons, the independent Claim 19 is allowable over the teachings of Palmer, Banks, Einbinder and their combination.

Claims 20-25 are dependent on the independent Claim 19. As discussed above, the independent Claim 19 is allowable over the teachings of Palmer, Banks, Einbinder and their combination. Accordingly, the Claims 20-25 are all also allowable as being dependent on an allowable base claim.

The independent Claim 29 is directed to a network of devices comprising a switching device and a plurality of modified hub devices. The switching device of Claim 29 includes a plurality of ports and a control circuit coupled to the plurality of ports for sending a periodic signal which signals the start of a period having a first portion and a second portion, wherein only communications in a first protocol are allowed during the first portion and only communications

in a second protocol are allowed during the second portion. The plurality of modified hub devices of Claim 29 each include a first interface configured for coupling to and communicating with one or more of a first type of device operating according to the first protocol and the second protocol, a second interface configured for coupling to and communicating with one or more of a second type of device operating according to only the second protocol wherein the first protocol has priority over the second protocol and a third interface coupled to a corresponding one of the plurality of ports, and wherein the second protocol is prioritized between a first set of traffic and a second set of traffic. As described above, neither Palmer, Banks, Einbinder nor their combination teach wherein the second protocol is prioritized between a first set of traffic and a second set of traffic. For at least these reasons, the independent Claim 29 is allowable over the teachings of Palmer, Banks, Einbinder and their combination.

Claims 30-36 are dependent on the independent Claim 29. As discussed above, the independent Claim 29 is allowable over the teachings of Palmer, Banks, Einbinder and their combination. Accordingly, the Claims 30-36 are all also allowable as being dependent on an allowable base claim.

Within the Office Action, Claims 26, 27, 37 and 38 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Palmer in view of Banks in view of Einbinder and further in view of U.S. Patent No. 6,611,529 to Krishnakumar et al. ("Krishnakumar"). Claims 26 and 27 are dependent on the independent Claim 19. Claims 37 and 38 are dependent on the independent Claim 29. As discussed above, the independent Claims 19 and 29 are both allowable over the teachings of Palmer, Banks, Einbinder and their combination. Accordingly, the Claims 26, 27, 37 and 38 are all also allowable as being dependent on an allowable base claim.

Within the Office Action, Claims 28 and 39 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Palmer in view of Banks and Einbinder and further in view of Thaler. Claim 28 is dependent on the independent Claim 19. Claim 39 is dependent on the independent Claim 29. As discussed above, the independent Claims 19 and 29 are both allowable over the teachings of Palmer, Banks, Einbinder and their combination. Accordingly, the Claims 28 and 39 are both also allowable as being dependent on an allowable base claim.

Within the Office Action, Claim 41 has been rejected under 35 U.S.C. § 103(a) as being unpatentable over Ito in view of Lo. Claim 41 is dependent on the independent Claim 40. As discussed above, the independent Claim 40 is allowable over the teachings of Ito. Accordingly, the Claim 41 is also allowable as being dependent on an allowable base claim.

Within the Office Action, Claims 8 and 42 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,450,411 to Heil ("Heil") in view of U.S. Patent Publication No. 2004/0019731 to Brown ("Brown"). It is possible the rejection is intended to be Heil with Suda, but it is unclear. Applicants have addressed both below.

Heil teaches an ATM network which includes isochronous and non-isochronous processors connected to an ATM network interface [Heil, Figures 2 and 3]. However, there is nothing in Heil that teaches a second interface configured for coupling to and communicating with one or more of a second type of device operating according to only the second protocol. Within the Office Action, it is stated that based on Figure 3, "a given device can have one type of processor as shown in Figure 3 and hence using either isochronous or non-isochronous protocol..." [Office Action, Page 24] However, Figure 3 of Heil only shows a group of 4 processors, two of which are isochronous and two are non-isochronous. There is nothing in Figure 3 to indicate that only one of the processors is able to be used alone. Furthermore, within the specification and claims, the processors are always disclosed as a group of isochronous and non-isochronous. Therefore, Heil clearly does not teach a second type of device operating according to only the second protocol. Furthermore, it is acknowledged within the Office Action, that Heil does not teach a third interface configured for coupling to and communicating with the switching device, wherein the switching device sends a periodic signal which signals the start of a period having a first portion and a second portion, wherein only communications in the first protocol are allowed during the first portion and only communications in the second protocol are allowed during the second portion.

Brown teaches a priority mechanism for scheduling isochronous and asynchronous transactions on a shared bus. [Brown, title] Brown also teaches:

...splitting an allocated shared bus time into frames of equal length. When a bus request is received the technique determines whether the bus request in a current frame is for an asynchronous transaction or an isochronous transaction. If an asynchronous transaction bus request exists it is processed, otherwise an isochronous transaction bus request is processed. Bus requests for an isochronous transaction are queued if received while an asynchronous transaction is currently being processed. Asynchronous transactions are given priority until a current frame time has ended. In one embodiment, at the start of a new frame (which becomes the current frame) any queued isochronous transactions are processed before asynchronous transactions of the current frame are given priority. [Brown, Abstract, Figures 5 and 6]

However, Brown does not teach sending a periodic signal which signals the start of a period having a first portion and a second portion, wherein only communications in the first protocol are

allowed during the first portion and only communications in the second protocol are allowed during the second portion. While Brown teaches a priority scheme, Brown does not teach the claimed priority scheme. Within the Office Action, with regards to a control circuit coupled to the plurality of ports for sending a periodic signal which signals the start of a period having a first portion and a second portion, all that is stated for the rejection is "some form of control switching circuit has to be interfaced to the ports" without any cite or reasoning. Applicants respectfully view this rejection as improper as there must be justification for any rejection. This is again further proof that more is being read into the prior art than what is actually taught. There is nothing within Brown that teaches a control circuit coupled to the plurality of ports for sending a periodic signal which signals the start of a period having a first portion and a second portion. Additionally, by the above amendments, the limitation wherein the second protocol is prioritized between a first set of traffic and a second set of traffic has been added to the claims. Heil, Brown and their combination do not teach this limitation. Furthermore, Heil, Suda and their combination do not teach this limitation.

In contrast to the teachings of Heil, Brown and their combination, the combined IEEE 1394-2000 and ethernet network of the present invention allows devices on the network to operate according to both the IEEE 1394-2000 protocol and the ethernet protocol. The devices within the network are able to send IEEE 1394-2000 isochronous data, IEEE 1394-2000 asynchronous data and ethernet data. Both IEEE 1394-2000 and ethernet devices within the network are coupled to modified hubs (MHubs) to form a local cluster. The MHubs are coupled to an ethernet switch which controls communications between devices in different local clusters. The ethernet switch and the MHubs obey an isochronous interval in which all isochronous data transfers will be allowed. Preferably, on a regular and reoccurring period, the ethernet switch sends an isotick signal to begin the isochronous interval. Alternatively, clocks at all nodes within the network are synchronized to start and stop the isochronous interval at the same time without the need for any one device to transmit the isotick signal. Any bandwidth left after the isochronous interval is then allocated to the traditional ethernet traffic and the IEEE 1394-2000 asynchronous traffic, until the start of the next isochronous interval. As described above, neither Heil, Brown nor their combination teaches a second type of device operating according to only the second protocol. Furthermore, neither Heil, Brown nor their combination teaches a third interface configured for coupling to and communicating with the switching device, wherein the switching device sends a periodic signal which signals the start of a period having a first portion and a second portion, wherein only communications in the first protocol are allowed during the

first portion and only communications in the second protocol are allowed during the second portion. Neither Heil, Brown nor their combination teaches a control circuit coupled to the plurality of ports for sending a periodic signal which signals the start of a period having a first portion and a second portion. Heil, Brown and their combination also do not teach wherein the second protocol is prioritized between a first set of traffic and a second set of traffic. Furthermore, Heil, Suda and their combination do not teach this limitation.

The independent Claim 8 is directed to a modified hub device configured for coupling between two or more devices operating according to two or more different protocols and a switching device, wherein devices of the first type and devices of the second type communicate with each other. The hub device of Claim 8 comprises a first interface configured for coupling to and communicating with one or more of a first type of device operating according to a first protocol and a second protocol, a second interface configured for coupling to and communicating with one or more of a second type of device operating according to only the second protocol and a third interface configured for coupling to and communicating with the switching device, wherein the switching device sends a periodic signal which signals the start of a period having a first portion and a second portion, wherein only communications in the first protocol are allowed during the first portion and only communications in the second protocol are allowed during the second portion, and further wherein the second protocol is prioritized between a first set of traffic and a second set of traffic. As described above, neither Heil, Brown nor their combination teaches a second type of device operating according to only the second protocol. Furthermore, neither Heil, Brown nor their combination teaches a third interface configured for coupling to and communicating with the switching device, wherein the switching device sends a periodic signal which signals the start of a period having a first portion and a second portion, wherein only communications in the first protocol are allowed during the first portion and only communications in the second protocol are allowed during the second portion. Heil, Brown and their combination also do not teach wherein the second protocol is prioritized between a first set of traffic and a second set of traffic. Furthermore, Heil, Suda and their combination do not teach this limitation. For at least these reasons, the independent Claim 8 is allowable over the teachings of Heil, Brown or Suda and their combination.

The independent Claim 42 is directed to a network of devices. The network of devices of Claim 42 comprises a switching device including a plurality of ports and a control circuit coupled to the plurality of ports for sending a periodic signal which signals the start of a period having a first portion and a second portion, wherein only communications in an isochronous protocol are

allowed during the first portion and only communications in an asynchronous protocol are allowed during the second portion and a plurality of modified hub devices each including a first interface configured for coupling to and communicating with one or more of a first type of device operating according to the isochronous protocol and the asynchronous protocol, a second interface configured for coupling to and communicating with one or more of a second type of device operating according to only the asynchronous protocol, wherein the isochronous protocol has priority over the asynchronous protocol and a third interface coupled to a corresponding one of the plurality of ports, and further wherein the asynchronous protocol is prioritized between a first set of traffic and a second set of traffic. As described above, neither Heil, Brown nor their combination teaches a second type of device operating according to only the second protocol. Furthermore, neither Heil, Brown nor their combination teaches a control circuit coupled to the plurality of ports for sending a periodic signal which signals the start of a period having a first portion and a second portion. Neither Heil, Brown nor their combination teaches wherein only communications in an isochronous protocol are allowed during the first portion and only communications in an asynchronous protocol are allowed during the second portion. Heil, Brown and their combination also do not teach wherein the asynchronous protocol is prioritized between a first set of traffic and a second set of traffic. Furthermore, Heil, Suda and their combination do not teach this limitation. For at least these reasons, the independent Claim 42 is allowable over the teachings of Heil, Brown or Suda and their combination.

Within the Office Action, Claim 43 has been rejected under 35 U.S.C. § 103(a) as being unpatentable over Heil in view of Suda and further in view of Lo.

Claim 43 is dependent on the independent Claim 42. As discussed above, the independent Claim 42 is allowable over the teachings of Heil, Suda and their combination. Accordingly, the Claim 43 is also allowable as being dependent on an allowable base claim.

New Claims

The independent Claim 44 is directed to a method of transmitting data within a network including one or more of a first type of device operating according to an isochronous protocol and an asynchronous protocol and one or more of a second type of device operating according to only the asynchronous protocol, wherein devices of the first type and devices of the second type communicate with each other within the network. The method of Claim 44 comprises establishing a periodic cycle including a first portion and a second portion, allowing only

transmissions according to the isochronous protocol during the first portion and allowing only transmissions according to the asynchronous protocol during the second portion, wherein the isochronous protocol has priority over the asynchronous protocol, and further wherein the asynchronous protocol is prioritized between IEEE 1394-2000 asynchronous traffic and ethernet traffic. The cited prior art does not teach wherein the asynchronous protocol is prioritized between IEEE 1394-2000 asynchronous traffic and ethernet traffic. For at least these reasons, the independent Claim 44 is allowable over the teachings of the cited prior art.

The independent Claim 45 is directed to a method of transmitting data within a network including one or more of a first type of device operating according to an isochronous protocol and an asynchronous protocol and one or more of a second type of device operating according to only the asynchronous protocol, wherein devices of the first type and devices of the second type communicate with each other within the network. The method of Claim 45 comprises establishing a periodic cycle including a first portion and a second portion, allowing only transmissions according to the isochronous protocol and time critical ethernet traffic during the first portion and allowing only transmissions according to the asynchronous protocol during the second portion, wherein the isochronous protocol and time critical ethernet traffic has priority over the asynchronous protocol. The cited prior art does not teach allowing only transmissions according to the isochronous protocol and time critical ethernet traffic during the first portion. For at least these reasons, the independent Claim 45 is allowable over the teachings of the cited prior art.

For the reasons given above, Applicants respectfully submit that all of the pending claims are now in condition for allowance, and allowance at an early date would be greatly appreciated. Should the Examiner have any questions or comments, he is encouraged to call the undersigned at (408) 530-9700 to discuss the same so that any outstanding issues can be expeditiously resolved.

Respectfully submitted,
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